

[Name of Document] CLAIMS

[Claim 1]

A seal ring which seals operating oil hermetically and is attached to an annular seal ring groove provided on an outer circumference of a shaft member, the seal ring comprising:

an inner ring circumferential surface facing an inside thereof in a radius direction;

an outer ring circumferential surface facing an outside thereof in the radius direction; and

a pair of side ring surfaces facing both sides thereof in an axial direction, wherein

when oil pressure is applied to the seal ring, the outer ring circumferential surface is pressed against an inner circumferential surface of a housing freely fitted into the outer circumference of the shaft member relatively rotatably, and the side ring surface is pressed against a side surface of the seal ring groove, thus retaining the oil pressure, the seal ring further comprising:

synthetic resin having a surface energy ranging from +0 N/cm to 20×10^{-5} N/cm inclusive of that of the operating oil; and

fluororesin containing modified fluororesin formed by being irradiated with an ionizing radiation in a range from

1 kGy to 10 MGy inclusive in a state of being heated up to a melting point thereof or higher under an inert gas atmosphere with an oxygen partial pressure of 1.33 kPa or less.

[Claim 2]

A seal ring according to claim 1, wherein a compounding ratio of the modified fluororesin to a total amount of the fluororesin ranges from 5 to 50% by volume inclusive.

[Claim 3]

A seal ring according to claim 1 or 2, wherein a compounding ratio of the synthetic resin having the surface energy of $+0 \text{ N/cm}$ to $20 \times 10^{-5} \text{ N/cm}$ inclusive of that of the operating oil is 5 to 50% by volume inclusive.

[Claim 4]

A seal ring according to any one of claims 1 to 3, wherein the synthetic resin is polyamideimide resin.

[Claim 5]

A seal ring according to claim 4, wherein the polyamideimide resin is used as powder with a mean particle diameter ranging from $2 \mu\text{m}$ to $150 \mu\text{m}$ inclusive.

[Claim 6]

A seal ring according to any one of claims 1 to 5, wherein the seal ring is used for a hydraulic seal for relatively rotating portions in an automatic transmission for a vehicle.

[Claim 7]

A hydraulic seal device using the seal ring according to any one of claims 1 to 6, wherein the seal ring comes into sliding contact with any one of the side surface of the seal ring groove of the shaft member which is nonferrous metal and the inner circumferential surface of the housing which is nonferrous metal.